

COMMENTS AND RESPONSE

In view of the comments below, Applicants respectfully requests that the Examiner reconsider the present application including objected to claims 8-10 and rejected claims 1-9 and 11-47, as amended, and withdraw the claim rejections.

Claim Amendments

By this response, Applicants have amended claims 27, 29, 34, 36, and 41 to correct minor clerical errors. In each of claims 27, 29, 34, and 36 the term "said local device" was used where the term "said communications device" should have been used. In claim 41, the term "said local device" was used where the term "said communications system" should have been used.

These amendments have been made solely to correct problems of antecedent basis. They are not intended to further limit the claims, and should not alter their scope.

By this response Applicants have also amended claim 8 to include all of the limitations of claims 1, 3, and 7, from which it depends. This amendment is made simply to place claim 8 in independent form, and in no way changes the scope of claim 8. No substantive material was added or deleted from claim 8 when it was converted to independent form.

No new matter has been added by any of these amendments to claims 8, 27, 29, 34, 36, and 41.

Rejection Under Hershey et al. and Ross

The Examiner has rejected claims 1, 3-7, 11, 19, 20, 22, 27, 29-32, 34, 36-39, 41, and 43-46 under 35 U.S.C. § 103(a) as being allegedly unpatentable over Hershey et al. (United

States Patent No. 5,878,034) in view of Ross (United States Patent No. 5,455,593). Applicants respectfully traverse this rejection.

Claim 1 recites “transmitting a message from the local device to a remote device via an ultrawide band (UWB) wireless medium,” and “receiving a response from said remote device via said UWB wireless medium.” Claim 27 recites “an ultra wide band (UWB) transceiver configured to: transmit a message from the communications device to a remote device via a UWB wireless medium, and receive a response from said remote device via said UWB wireless medium.” Claim 34 recites “means for transmitting a message from the communications device to a remote device via an ultra wide band (UWB) wireless medium,” and “means for receiving a response from said remote device via said UWB wireless medium.” Claim 41 recites “transmitting a message from the local device to a remote device via an ultra wide band (UWB) wireless medium,” and “receiving a response from said remote device via said UWB wireless medium.” As this shows, each independent claim recites the use of a UWB wireless medium.

The Examiner has asserted that “it would have been obvious to one of ordinary skill at the art, at the time of the invention, to transmit and receive information of Hershey et al. via UWB wireless medium as taught by Ross for precision and low cost.” However, given the requirements of the systems taught in Hershey et al. and Ross, it would not only be non-obvious to combine the two, such a combination would be non-functional.

Hershey et al. teaches a communications system that operates between a spacecraft and one or more ground stations. In particular, Hershey et al. teaches that a set of modulated signals are transmitted from the ground station toward a spacecraft at a transmission time. The spacecraft then retransmits the ranging signal, and the ranging signal returns to the ground station. (See, e.g., Hershey et al., column 2, lines 45-54.)

In contrast, Ross relates to Ultra-Wideband radar or data link transmissions, and particularly teaches that because of FCC regulations, it will be necessary to reduce the bandwidth of a UWB transmission so that its spectral energy does not extend beyond assigned limits. (See, e.g., Ross, column 1, lines 36-40, and column 2, lines 14-16.)

The sorts of UWB transmissions described in Ross are completely incompatible with a system as shown in Hershey et al. that must communicate between a ground station and a satellite. In fact, it would be impossible for the UWB transmissions of Ross to be of sufficient power to reach an orbiting satellite, yet still maintain the power limitations imposed by the FCC.

There is no specific teaching in either Hershey et al. or Ross to combine their teachings. And because a combination of the two would not function properly, there would not be any suggestion in either Hershey et al. or Ross to either to combine the two disclosures. Quite to the contrary, a person skilled in the art would be disinclined to combine the two references because such a combination would be non-functional. As a result, it would be improper to combine the teachings of Ross with those of Hershey et al.

Claims 3-7, 11, 19, 20, and 22 depend from claim 1 and are allowable for at least the reasons given above for claim 1. Claims 29-32 depend from claim 27 and are allowable for at least the reasons given above for claim 27. Claims 36-39 depend from claim 34 and are allowable for at least the reasons given above for claim 34. Claims 43-46 depend from claim 41 and are allowable for at least the reasons given above for claim 41.

Claim 6 recites "receiving at said local device a device type identifier from said remote device," and "obtaining a predetermined delay related to said device type from a lookup table stored in said local device." Nothing in Hershey et al. or Ross, alone or in combination, discloses

or suggests either the use of a device type identifier or the use of a lookup table to obtain a predetermined delay related to the device type.

Claim 11 recites “selectively enabling communications with said remote device based on said position of said remote device.” Claim 31 recites that its processor is further configured to “selectively enable communications with said remote device based on said position of said remote device.” Claim 38 recites “means for selectively enabling communications with said remote device based on said position of said remote device.” And claim 45 recites “selectively enabling communications with said remote device based on said position of said remote device.”

One example of this concept of selectively enabling communication based on position data is when the local device automatically enables data communications with devices that are located within a predefined range at any given time while blocking all remote devices outside the predefined range will. (See, e.g., specification, from page 25, line 23, through page 28, line 9, and Fig. 4.)

Nothing in Hershey et al. or Ross, alone or in combination, discloses or suggests these features. Ross discloses nothing regarding the position of devices. And Hershey et al. discloses a system in which multiple ground stations use the same spacecraft channel for communication among themselves. In this system, a TDMA mode is used to prevent simultaneous transmission of two or more signals through the same spacecraft channel. (See, e.g., Hershey et al., column 1, lines 18-32.) However, nothing in Hershey et al. discloses or suggests that any of the ground stations selectively enable communications with the spacecraft based on the position of the spacecraft. The ground stations use the location information together with knowledge of their own locations to determine appropriate packet transmission times, not to selectively enable communication with the spacecraft. (See, e.g., Hershey et al., column 3, lines 22-26.)

Claim 19 recites “engaging in secure communications with said remote device based on distance.” Claim 32 recites that its processor is “configured to perform said function by causing said communication device to communicate with said remote device by secure communications with said remote device based on said distance determined.” Claim 39 recites that “said means for communicating with said remote device comprises means engaging in secure communications with said remote device based on said distance determined.” And claim 46 recites that “the communications system is further caused to perform said step of communicating with said remote device by engaging in secure communications with said remote device based on distance.”

One example of this concept of engaging in secure communications based on position data is to only allow secure communications with remote devices that are within a certain minimum range of the local device, allowing unsecured communications with remote devices that are between the minimum range and a maximum range from the local device, and blocking communications with all remote devices outside the maximum range. (See, e.g., specification, from page 29, line 27, through page 33, line 11, and Fig. 6.)

Nothing in Hershey et al. or Ross, alone or in combination, discloses or suggests these features. Ross discloses nothing regarding the distance between devices. And Hershey et al. discloses a system in which multiple ground stations use the same spacecraft channel for communication among themselves. The ground stations use the location information together with knowledge of their own locations to determine appropriate packet transmission times. (See, e.g., Hershey et al., column 1 lines 18-29, and column 3, lines 22-26.) Nothing in Hershey et al. discloses or suggests having the ground stations engage in secure communications with the spacecraft based on the distance between the ground stations and the spacecraft. Each ground

station has the same sort of communication link with the spacecraft regardless of the actual distance between the ground station and the spacecraft.

Claim 20 recites “transmitting a message from a local device to a plurality of remote devices within a communicating area of said local device,” “receiving a response from each of said plurality of remote devices,” and “determining a round trip time between transmitting said message and receiving of said response for each of said plurality of remote devices.” Similarly, claim 22 recites “determining a distance from said local device to another remote device.” Figs. 3 and 4 and related disclosure in Applicants’ specification show examples of how a single local device 301 can make distance measurements with multiple remote devices 302, 303, ... 300N. (See, e.g., specification, from page 24, line 2, through page 28, line 9, and Figs. 3 and 4.)

Nothing in Hershey et al. or Ross, alone or in combination, discloses or suggests either the use of two or more remote devices, or the process of making distance determinations for two or more remote devices. Ross discloses nothing regarding the distance between devices. And Hershey et al. discloses a system in which multiple ground stations use the same spacecraft channel for communication among themselves. The ground stations use the location information together with knowledge of their own locations to determine appropriate packet transmission times. (See, e.g., Hershey et al., column 1 lines 18-29, and column 3, lines 22-26.) But Hershey et al. discloses the use of a single spacecraft with a plurality of ground stations. Three or more of the ground stations determine propagation delay between themselves and the spacecraft, and a master ground station determines the location of the spacecraft by the use of these propagation delays. (See, e.g., Hershey et al., column 2 lines 19-30.) Nothing in Hershey et al. discloses or suggests the use of multiple spacecraft, nor does it disclose or suggest making multiple distance determinations between ground stations and multiple spacecraft.

Based on at least the reasons given above, Applicants respectfully request that the Examiner withdraw the rejection of claims 1, 3-7, 11, 19, 20, 22, 27, 29-32, 34, 36-39, 41, and 43-46 under 35 U.S.C. § 103(a) as being allegedly unpatentable over Hershey et al. in view of Ross.

Rejection Under Hershey et al., Ross, and MPEP § 2144.03

The Examiner has rejected claims 12-18 under 35 U.S.C. § 103(a) as being allegedly unpatentable over Hershey et al. in view of Ross and further in view of MPEP § 2144.03.

Claims 12-18 all ultimately depend from claim 11 and are allowable for at least the reasons given above for claim 11. Nothing in the Examiner's official notice under MPEP § 2144.03 cures the deficiencies in Hershey et al. and Ross noted above.

With respect to claims 12 and 17, the Examiner has asserted that "the triangular technique is well known and commonly used in the art to locate an object." Applicants object to the Examiner's official notice and request identification of a more explicit basis on which the Examiner regards the matter as subject to official notice.

For example, claim 12 recites "triangulating the position of the remote device based on said distance from the local device to the remote device, said another distance from the local device to the reference point and said third distance from the reference point to the remote device." The Examiner has given no concrete support, either general or specific, for this feature.

Claim 17 recites "triangulating the position of the remote device based on said distance from the local device to the remote device, said respective distances from the local device to the plurality of reference points and said distances from the remote device to each of said plurality of

reference points and between each of said plurality of reference points.” The Examiner has given no concrete support, either general or specific, for this feature.

With respect to claims 13-16 and 18, the Examiner has asserted that “displaying a map including indicators that represent positions of various objects is used widely in GPS systems.” Applicants object to the Examiner’s official notice and request identification of a more explicit basis on which the Examiner regards the matter as subject to official notice.

For example, claim 14 recites “inputting a selection input at a screen position on said display,” “determining whether the selection input corresponds to said display position for said remote device,” and “enabling communications with said remote device if the selection input corresponds to said display position for said remote device.” This claim involves more than simply “displaying a map including indicators that represent positions of various objects,” as described in the specification. The Examiner has provided no support either general or specific for the features of inputting a selection input, determining whether the selection input corresponds to a display position, and enabling communications if the selection input corresponds to the display position.

Claim 15 recites that “said step of inputting a selection input at a screen position on the display comprises inputting said selection input on a touch screen.” Making a selection using a touch screen is more than simply showing “indicators that represent positions of various objects,” as noted by the Examiner. The Examiner has provided no support either general or specific for any features involving the use of a touch screen.

Claim 16 further recites “indicating on said display whether said remote device is enabled.” Displaying additional information, such as whether a device is enabled, is more than simply showing “indicators that represent positions of various objects,” as noted by the

Examiner. The Examiner has provided no support either general or specific for the feature of displaying information regarding whether a remote device is enabled.

Claim 18 further recites that “said plurality of reference points comprises first, second, third, and fourth reference devices located in quadrature or management relative to a center point of an area in which the local device is located,” and “receiving information from each reference device about its respective location.” The specific elements of this display, particularly locating devices in quadrature or management relative to a center point involves more than simply showing “indicators that represent positions of various objects,” as noted by the Examiner. The Examiner has provided no support either general or specific for the feature of displaying multiple reference devices located in quadrature or management relative to a center point of an area in which the local device is located.

With regard to all of claims 12-18, Applicants specifically request that the Examiner explicitly point to some evidence of this assertion, including specific technical and scientific reasoning to support the assertion that the triangular technique and map displays recited in claims 12-18 are “common knowledge.” Specifically, what evidentiary support in the record does the Examiner rely upon generally, if not specifically?

Therefore, for at least the reasons given above, Applicants respectfully request that the Examiner has not properly set forth the specific rationale for the official notice taken with respect to claims 12-18, and has not properly indicated the documentation in the record that the Examiner relies upon in support for this official notice. Applicants therefore respectfully request that the Examiner withdraw the rejection of claims 12-18 under 35 U.S.C. § 103(a) as being allegedly unpatentable over Hershey et al. in view of Ross and further in view of MPEP § 2144.03.

Rejection Under Hershey et al., Ross, and Leung

The Examiner has rejected claims 2, 21, 28, 35, and 42 under 35 U.S.C. § 103(a) as being allegedly unpatentable over Hershey et al. in view of Ross and further in view of Leung (United States Patent No. 6,195,705).

Claim 2 depends from claim 1 and is allowable for at least the reasons given above for claim 1. Claim 21 depends from both claim 1 and claim 20 and is allowable for at least the reasons given above for claims 1 and 20. Claim 28 depends from claim 27 and is allowable for at least the reasons given above for claim 27. Claim 35 depends from claim 34 and is allowable for at least the reasons given above for claim 34. And claim 42 depends from claim 41 and is allowable for at least the reasons given above for claim 41. Nothing in Leung cures the deficiencies in Hershey et al. and Ross noted above.

In addition, claim 21 recites “determining a distance from said local device to each linked remote device based on said round trip times determined, wherein said step of performing a function in said local device based on the round trip times comprises enabling communications with said remote devices based on said distances determined.” Nothing in Hershey et al., Ross, or Leung, alone or in combination, discloses or suggests determining distances to multiple linked devices, or enabling communications with multiple remote devices based on distances determined.

The reasoning for this is analogous to that given above on page 19 of this response for claims 11, 31, 38, and 45. Nothing in Leung cures the deficiencies in Hershey et al. and Ross noted in that argument above.

Based on at least the reasons given above, Applicants respectfully request that the Examiner withdraw the rejection of 2, 21, 28, 35, and 42 under 35 U.S.C. § 103(a) as being allegedly unpatentable over Hershey et al. in view of Ross and further in view of Leung.

Rejection Under Hershey et al., Ross, and Upadhyay et al.

The Examiner has rejected claims 23-26, 33, 40, and 47 under 35 U.S.C. § 103(a) as being allegedly unpatentable over Hershey et al. in view of Ross and further in view of Upadhyay et al. (United States Patent No. 6,115,409).

Claims 23-26 each depend ultimately from claim 22 and are allowable for at least the reasons given above for claim 22. Nothing in Upadhyay et al. cures the deficiencies in Hershey et al. and Ross noted above.

Claim 33 recites that a processor in a communications device is configured to “determine a distance from said communications device to another remote device.” Claim 40 recites “means for determining a distance from said communications device to another remote device.” Claim 47 recites “determining a distance from said communications device to another remote device.” Nothing in Hershey et al., Ross, or Upadhyay et al., alone or in combination, discloses or suggests that a communications device determine the distance between itself and two or more remote devices.

Claim 23 also recites “using a directional antenna to identify a respective position, of said remote device and said another remote device.” Claim 33 recites that a processor is configured to “use a directional antenna to identify a respective position, of said remote device and said another remote device.” Claim 40 recites “means for using a directional antenna to identify a respective position, of said remote device and said another remote device.” Claim 47 recites “using a

directional antenna to identify a respective position, of said remote device and said another remote device.” Nothing in Upadhyay et al., however, discloses or suggests using a directional antenna to identify a respective position of another device.

The Examiner has cited Upadhyay et al. as teaching “the use of multi-element directional antenna to optimize the SINR power ratio.” Upadhyay et al. notes that:

“Several spatial (directional) interference cancellation techniques employing multi-element array antennas have been applied to combat wideband and narrowband interferences. In an adaptive array antenna (more generally referred to as spatial filters or smart antennas) antenna element outputs are multiplied by controlling weights to steer and shape the antenna array pattern to either direct nulls towards the jammers, direct a beam towards the desired signal, or form an antenna pattern that accomplishes both by optimizing the signal-to-interference-plus-noise (SINR) power ratio.

(Upadhyay et al. column 2, lines 11-16.)

But nothing in Upadhyay et al. discloses or suggests using the antenna to specifically identify a position of a remote device. While Upadhyay et al. shows using a multiple element antenna for eliminating wideband and narrowband interference, that is not the same as using the antenna for direction finding. Although the antenna system of Upadhyay et al. can form antenna pattern nulls in the directions of interferers, it does this by performing a complex process by which a feedback subsystem operates to adjust the controlling antenna weights of the adaptive antenna array until it prioritizes signal nulling based on bandwidth instead of signal strength. (See, e.g., Upadhyay et al., column 4 lines 9-21.) However, there is nothing to suggest that any specific direction data is generated. Rather, the device in Upadhyay et al. searches for a set of filter weights, which optimize the operation of a spatial filter. It does this by calculating the signal-to-interference-plus-noise-ratio (SINR) at the output of a temporal filter and adjusting those weights until the SINR is maximized. (See, e.g., Upadhyay et al., column 7 lines 15-45.) But there is no correlation indicated between these weights and the direction of a specific

interfering device, nor is there any indication that this weighting information could be used to determine a direction to a specific remote device.

Based on at least the reasons given above, Applicants respectfully request that the Examiner withdraw the rejection of 23-26, 33, 40, and 47 under 35 U.S.C. § 103(a) as being allegedly unpatentable over Hershey et al. in view of Ross and further in view of Upadhyay et al.

Objection to Claims 8-10

The Examiner has objected to claims 8-10 as being dependent upon rejected base claims, but indicated that they would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

As noted above, Applicants have amended claim 8 to include all of the limitations of claims 1, 3, and 7, from which it depends. Claims 9 and 10 both depend from claim 8. This places claims 8-10 in a condition that the Examiner has indicated are allowable. Applicants therefore respectfully request that the Examiner indicate the allowability of claims 8-10.

Drawings

In the Office Action dated September 11, 2003, the Examiner gave no indication as to whether the formal drawings filed on October 10, 2003, were accepted. Applicants respectfully request that the Examiner indicate the status of the current drawings.

Conclusion

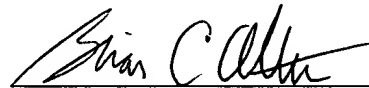
Accordingly, Applicants respectfully submit that the claims, as amended, clearly and patentably distinguish over the cited references of record and as such are deemed allowable. Such

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allowance is hereby earnestly and respectfully solicited at an early date. If the Examiner has any suggestions, comments, or questions, calls are welcome at the telephone number below.

Although it is not anticipated that any additional fees are due or payable, the Commissioner is hereby authorized to charge any fees that may be required to Deposit Account No. 50-1147.

Respectfully Submitted,



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